

PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL SEARCHING AUTHORITY

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SEP 10 2004

ASHIDA & KIMURA

INVITATION TO PAY ADDITIONAL FEES

(PCT Article 17(3)(a) and Rule 40.1)

Date of mailing (day/month/year)	08/09/2004
Applicant's or agent's file reference 02F023 - PCT	PAYMENT DUE within 45 xxx days from the above date of mailing
International application No. PCT/JP 02/13442	International filing date (day/month/year) 24/12/2002
Applicant TOKYO ELECTRON DEVICE LIMITED	

1. This International Searching Authority

- (i) considers that there are 3 (number of) inventions claimed in the international application covered by the claims indicated ~~xxx~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~xxx~~ on the extra sheet:

- (ii) ☒ has carried out a partial international search (see Annex) ☐ will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:
1-15, 11-15

- (iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid

2. The applicant is hereby **invited**, within the time limit indicated above, to pay the amount indicated below:

EUR 945,00	x	<u>2</u>	=	EUR 1.890,00
Fee per additional invention		number of additional inventions		total amount of additional fees

Or, _____ x _____ = _____

The applicant is informed that, according to Rule 40.2(c), the payment of any additional fee may be made under protest, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. ☐ Claim(s) Nos. _____ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority



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Authorized officer

Nabila Saioudi

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
 see 'Invitation to pay additional fees'
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	<p>US 5 778 439 A (JOHNSON ROBERT ANDERS ET AL) 7 July 1998 (1998-07-07)</p> <p>figure 3A figure 11 figure 22A figure 37A column 2, line 1 - line 16 column 6, line 36 - line 48 column 19, line 1 - line 6 column 22, line 5 - line 11 column 26, line 56 - line 59 column 30, line 39 - line 41 column 30, line 61 - line 63 column 32, line 25 - line 31 column 32, line 46 - line 53</p>	<p>1,4,5, 11,14,15 2,3,12, 13</p>
X A	<p>US 5 760 602 A (TAN CHARLES M C) 2 June 1998 (1998-06-02)</p> <p>figure 1 figure 10 column 3, line 39 - line 43 page 5, column 5, line 1 - line 9 column 7, line 20 - line 27</p>	<p>1,4,5, 11,14,15 2,3,12, 13</p>

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-5,11-15

Means for switching configurations in a time multiplexed reconfigurable computing system.

2. claims: 6,9,16,19

A reconfigurable computing system with a stack memory.

3. claims: 7-8,10,17-18,20

A reconfigurable computing system with configuration load on miss.

Reasons for lack of unity

The closest prior art US5760602 (D1) discloses an heterogeneous programmable array (figure 1) with a plurality of storage units (configuration memory cells) which store a plurality of configuration data modules including look up tables (column 5, lines 1 to 10) and a logic computing unit which includes a plurality of programmable logic circuits (prog. switch elements) wherein said logic computing unit provides a logic function value of logic input data as logic output data by referring to at least one configuration data module stored in at least one of said plurality of data storage units (figure 3, LUT). It further comprises a selector (Time slice controller) that selects one of said plurality of data storage units circularly (figure 10).

The differences between the disclosure of D1 and the three inventions can be defined as follows :

Group I.: The system of claim 2 differs from that of D1 in that the storage units form a shift register.

Group II: The system of claim 6 differs from that of D1 in that a detector detects calls to or returns from configurations and a controller that stores internal parameters in a parameter register on calls and restores the internal parameters from the parameter register on returns.

Group III: The system of claim 7 differs from that of D1 in that a detector detects calls to or returns from configurations and a controller activates the loading of the target configuration if this one

is not already present in one of the configuration data modules.

The respective objective problems solved by these differences are:

Group I : to provide a fast switching between configurations with low interconnection overhead.

Group II : to keep the internal state of a configuration between configuration switches.

Group III: to handle a number of configurations greater than the number of configuration memory planes implemented internally.

The features of the claims on file which make a contribution over the prior art, i.e. the Special Technical Features, are consequently : the shift register like interconnection of the memories holding the configurations (claim 2), the separate stack memory for saving/restoring internal parameters (claim 6) and the loader that loads configurations as they are referenced if they are not already available.

Since the special technical features are neither identical nor corresponding (i.e they cannot function in an equivalent, complementary or cooperative manner with the special technical feature of another invention or are specially adapted to a special technical feature of another invention), there are no same or corresponding special technical features shared by all independent claims of the invention.

In conclusion, therefore, the three groups of claims are not linked by common or corresponding special technical features and define two different inventions not linked by a single general inventive concept. The application, hence, does not meet the requirements of Unity of Invention as defined in Rule 13(1) & (2) PCT.

The application relates to a plurality of inventions, or groups of inventions, in the sense of Rule 13.1 PCT. They have been divided as defined above. If the applicant pays additional fees for one (or more) not yet searched group(s) of invention(s), then the further search(es) may reveal further prior art that gives evidence of a further lack of unity 'a posteriori' within one (or more) of the not yet searched group(s). In such a case only the first invention in this (each of these) group(s) of inventions, which is considered to lack unity of invention, will be the subject of a search.

No further invitation to pay further additional fees will be issued. This is because Article 17(3)(a) PCT stipulates that the ISA shall establish the International Search Report on those parts of the international application which relate to the invention first mentioned in the claims ('main invention') and for those parts which relate to inventions in

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International application No.

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respect of which the additional fees were paid. Neither the PCT nor the PCT guidelines provide a legal basis for further invitations to pay further additional search fees (W17/00, point 11 and W1/97, points 11-16).

Patent Family Annex

Information on patent family members

International Application No

PCT/JP 02/13442

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5778439	A	07-07-1998	NONE	
US 5760602	A	02-06-1998	EP JP	0785630 A2 10173516 A
				23-07-1997 26-06-1998